Name:

at1113exam: Expand, factor, and solve quadratics (v201)

1. Expand the following expression into standard form.

$$(4x + 7)(3x - 2)$$

$12x^2 - 8x + 21x - 14$

$12x^2 + 13x - 14$

2. Expand the following expression into standard form.

$$(3x - 5)^2$$

$9x^2 - 15x - 15x + 25$

$9x^2 - 30x + 25$

3. Solve the equation.

$$(7x - 9)(5x - 8) = 0$$

$x = \frac{9}{7}$ $x = \frac{8}{5}$

4. Expand the following expression into standard form.

$$(8x - 9)(8x + 9)$$

$64x^2 + 72x - 72x - 81$

$64x^2 - 81$

5. Solve the equation.

$$7x^2 + 39x - 45 \;=\; 2x^2 + 5x + 3$$

$$5x^2 + 34x - 48 = 0$$
$$(5x - 6)(x + 8) = 0$$
$$x = \frac{6}{5} \qquad x = -8$$

6. Solve the equation with factoring by grouping.

$$8x^2 - 10x - 12x + 15 \;=\; 0$$

$$(2x - 3)(4x - 5) = 0$$
$$x = \frac{3}{2} \qquad x = \frac{5}{4}$$

7. Factor the expression.

$$x^2 + 16x + 63$$

$$(x + 7)(x + 9)$$

8. Factor the expression.

$$49x^2 - 64$$

$$(7x + 8)(7x - 8)$$